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# **TAKING THE TABLET: AN INTROSPECTIVE PERSPECTIVE ON USING PEN-BASED COMPUTING IN THE EXECUTIVE CASE CLASS**

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## **The Death of Chalk**

Old fashioned instructors, particularly those who use the case method in their teaching, love nothing more than a classroom with lots of good, old fashioned blackboards and lots of chalk. As the forensic psychologist Kreizler, the protagonist in Caleb Carr's (1994) novel *The Alienist* implies, when one is uncertain and one needs to record words, the best way to do so is with chalk on a blackboard, for one will frequently have to erase things. Unfortunately, most modern executive education classrooms are not designed by old fashioned instructors, particularly those who teach cases. They come with the latest technology: preset lighting systems; shiny whiteboards with a kaleidoscope of colored pens; massive podiums for storing all manner of books, PCs, VCRs, DVD players; and controls for lighting, air conditioning, and sound. Most have at least one LCD projector, and there are numerous screens that can be drawn down or raised at the touch of a button. But no blackboards and no chalk.

The predicament of these modern classrooms is that they are usually designed by administrators, architects and technicians, without, or despite the advice of experienced case instructors. By the time the instructor gets to teach in the class it is often too late, and generally too expensive to change anything. While the classrooms are long on technology and aesthetics, they are often very short on teaching comfort and convenience. The problem with white- (as opposed to black-) boards is that that the pens used to write on them dry up very quickly, and even then, it is only the black and blue pens that are legible and visible (why all the greens, reds, browns and yellows?). While the multiple screens are nice for PowerPoint presentations, what if the instructor wants to write things down and use a PowerPoint presentation, and/or show a movie? Then there is the continual upping and downing of screens, and the adjustment of lights. What if the instructor wants to write, use a spreadsheet, a PowerPoint presentation, a spreadsheet, show a movie and access the internet all in the same class? And what, heaven forbid, if the executive participants want a record of what was written on the board to refer to afterwards?

While the scenarios sketched above may be a little extreme, most veteran case teachers on executive programs will be sympathetic to them, and almost all would have been subjected to them at some time or another. Especially those teachers who work in different classrooms, different campuses, and different schools would have experienced the quirks and inconveniences of classroom design and setup in a variety of venues. In this short introspective paper (and here I follow in the tradition of consumer researchers such as Holbrook 1995) I suggest the use of a Tablet PC to overcome most of the

problems described above. The paper begins by introducing the innovation, and then describes how the innovation solves the problems. Next, it gives preliminary results and makes some observations that may be useful to those considering adopting the innovation, and also considers some problems that may be encountered. It concludes by reflecting on other possible applications of the technology.

### **Taking the Tablet**

The pen-based tablet computer (hereafter referred to as a tablet) is a technological innovation that emerged in the early years of the new millennium. Essentially it consists of a laptop computer with a screen that can swivel, and a special pen that can be used to write directly on to the screen and to give commands, thereby taking the place of the keyboard. The screen can capture the handwriting or drawing directly, and store this as a graphic, or it can translate handwritten script into digital text, which can then be transferred to a word processor.

The idea of doing away with a cumbersome keyboard for navigating and entering information has long been a Holy Grail, but it has been generally slow to take off (Gartenberg 2005). Microsoft Corp.'s Tablet PC operating system initially failed to make a great impact in the market - some of the factors that slowed pen-based platforms included handwriting recognition that never lived up to its hype, and inadequate hardware. More recently though, the market has seen the launch of reliable, powerful and affordable tablets by reputable firms such as HP, Toshiba, IBM (Lenovo), and Samsung, and while the handwriting recognition technology can by no means be described as perfect, it is infinitely better than the technology of just two or three years back. In any case, as this paper argues, it is not really the handwriting recognition capability that makes the technology so appropriate for the modern executive case class.

I use the tablet as my sole media tool in classes for executives (primarily Executive MBA classes with a very large case component, and a shorter non-degree executive development program). I use the tablet (projected through the LCD projector) in a conventional way to show PowerPoint presentations, access the Internet, and explore spreadsheets. I also use the tablet to store digital movie content, such as ads, or to show the video footage that comes with some cases. However, it is in the teaching of cases that the tablet really comes to the fore. I use Microsoft's Windows Journal, a simple pen based screen capture program to record case discussion and analysis, draw diagrams and models, and generally give shape to the case analysis – pretty much in the same way a blackboard would be used.

### **How taking the tablet solves the problem(s)**

The first problem the tablet solves is the simple but fundamental one of media. Unlike whiteboard pens, the tablet's pen never dries up, even when its top is left off (in fact, it doesn't have a top). Unlike whiteboards and blackboards it doesn't require a physical board duster (or a well aimed shirt sleeve) to expunge mistakes or make changes, although the software does have a digital eraser which can be used for the same purpose, along with an infinite array of pen sizes and colors, and also highlighters. Similarly, the instructor does not have to contend with a mess of pen- or chalk dust after each class. So, in short, the tablet has all of the benefits of the old blackboard without the downside.

The second dilemma the tablet resolves is that of continually needing to raise and lower the projection screen when the board is required or when a PowerPoint or movie needs to be shown. The screen is always down, and the boards are never used. The tablet flips seamlessly between its writing and capture function (using Windows Journal), PowerPoint presentations, the Internet, a spreadsheet, and movies using either the built in DVD player, or shorter snippets stored on the hard drive.

Finally, the tablet solves the problem of having no hard copy record of the class discussion and analysis (whether that is of a lecture or a case analysis). Some educationists might argue that it is good for students, even executives, to take notes. While this is possibly true for lectures and content, it is entirely inappropriate for cases, where the executives' participation and engagement are so critical. Windows Journal files can be saved and then printed to PDF format and subsequently either emailed to participants or stored on a course website. Experienced case teachers know that while they might not expect executives to memorize or study the results of in-class case analysis, most executives take notes. By absolving them of most of this responsibility, they are able to give greater attention to class participation. Most executives also like to have a record of their class's case analysis and discussion. I find that there is also a benefit to me as a teacher – I get to keep a great record of case analyses that worked well (in which instance I can attempt to do similar things in the future), and those that didn't (in which case I have a record of what to avoid). While most case teachers go into class with some kind of teaching plan, it is on rare occasions that everything goes according to this plan. The tablet enables the teacher to keep a good record of each class's little insights and idiosyncrasies, its debacles and disasters.

### **The Results – Some Observations**

Apart from the benefits of the approach, outlined above, experiences gained and feedback from executives has been insightful and rewarding. I find that the use of the tablet forces me to plan more effectively, and to teach in a more focused way. Of course, overcoming the simple but irritating problems identified above makes it all worthwhile. My general experience is that the method enables one to focus on critical issues without having to manipulate arcane technologies – those little moments every instructor dreads, where one has to apologize for technology that isn't working, or that's taking longer than it should.

Feedback from executives is entirely positive. While they probably don't consciously experience the same operational benefits (boards, screens, etc) as the instructor, they do appreciate the clarity of the text as it appears on the screen, and the fact that they have almost immediate access to the written record of the class.

A request to an executive class to write comments on the approach as part of a qualitative survey (not part of any official teaching evaluation) resulted in the following remarks:

- “I really enjoyed our discussion of the Calyx and Corolla case, so it was great to have a printable record of our class's analysis”.
- “I hate taking notes in class as I feel I am missing the discussion. You using the tablet and knowing we can access the notes means I can listen and speak more”.

- “Thank you for using the tablet. Now I really hate it when other instructors use the stupid screen, up and down all the time. It breaks my concentration. Get real, this is the year 2006.”
- “Why do some instructors still use the white board? I can’t read writing with a green pen, no one can. Don’t they think about what the executive sees? And in any case the pens are dry most of the time, so the poor guy spends half the class hunting pens, and embarrassing himself by losing his temper and throwing away the empty ones! Meanwhile it’s the lazy accounting professor from the previous class who neglected to put the pen’s top back on.”

### **Some Problems Encountered**

Like all approaches to instruction this method is not without its problems, some of which are inherent, and others of which are merely technical. The inherent problems are: First, one only has access to a page at a time, and so only one aspect of a case study can be seen at a time, whereas if one were using a board(s) one could simply move on to the next board and the participants could see the progression, and of course, both boards at the same time. This is illustrated in exhibit 1 which shows part of a recent in-class analysis of the Harvard Business School Calyx and Corolla case (Calyx and Corolla, 1994). This necessitates having to open a new page of Windows Journal every time a previous page fills up, and participants can’t see the previous pages (“boards”) without the instructor flipping between them. While this is a minor inconvenience it is more than compensated for by the benefits of the approach however.

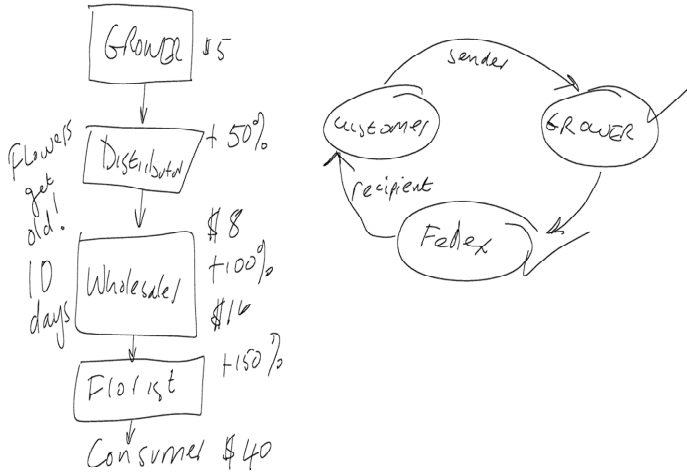
Second, as an instructor one needs to be aware that standing in front of the tablet all the time means that one moves around less. Obviously this depends on the instructor’s personal style, but mine is usually to move around the room, approach participants, and get closer to them. This necessitates a forced decision and determination to move around more, and to get away from the screen. If not, up-front choreography can be limited by the technology. Third, it is necessary to focus on handwriting! While this is true for writing on boards as well, the use of a tablet creates a more permanent record of a class analysis, and is indeed a main purpose. Illegible handwriting negates the advantage entirely. While Windows Journal does have excellent handwriting recognition which can change the script to font text, I have not used this, as frequently when teaching marketing cases one makes use of simple diagrams such as blocks circles and arrows. It doesn’t cope well with these.

Finally, there are situations where executives are required to prepare and do “PowerPoint” presentations and may wish to use their own laptops to do this. This requires a changing over of computers, and probably takes up a lot of unnecessary setup time. My solution to this is to have them save their presentation on a USB memory stick and insert this into the tablet and run the presentation from it.

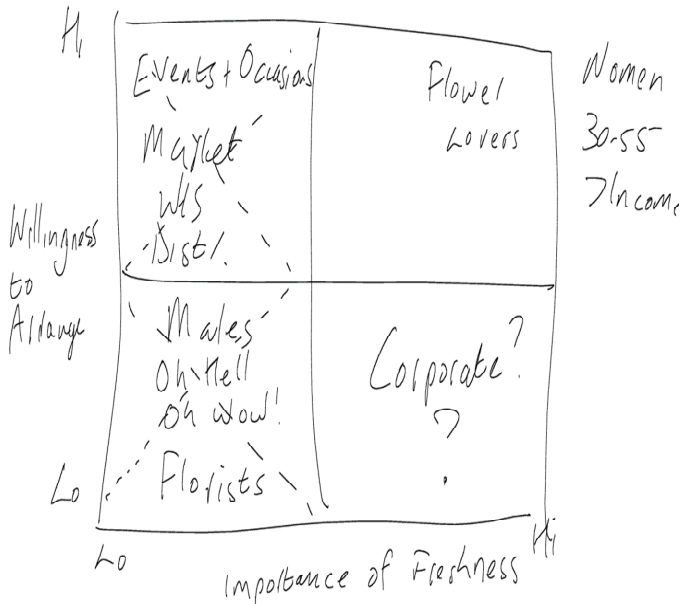
**Exhibit 1: Example of a recent tablet based case discussion (HBS Calyx and Corolla case), some extracts**

**Board 1**

CALYX AND COROLLA



**Board 2**



## Accepting Technology: The Tablet in the Executive Class

The issue of technology in the marketing classroom has received considerable attention in the marketing and business education literature (e.g. Pitt and Page 2006; Hunt, Eagle and Kitchen 2004; Clarke, Flaherty and Mottner 2001) with one journal recently devoting a special editions to the topic (Marketing Education Review 2002). Yet as far as can be ascertained little attention has been given thus far to tablet teaching by instructors. Those who have taken the tablet have not as yet spread the gospel to others to any great extent. In other areas of education the tablet has recently been acclaimed as a major breakthrough. For example Virginia Tech's School of Engineering is now requiring new students to buy tablet PCs, seeing significant advantages as both the hardware and the software overcome previous limitations (Cheng 2006). Similarly, Saint Mary's School, an all-girls school in Raleigh, North Carolina, uses tablets in class and has experienced very positive results (Milner 2006). Teachers create outlines for each class, project these onto a screen, and use tablet technology to scribble down notes on the file while lecturing. After class, they save the notes to a web server for anyone to access.

My own observation is that when it comes to tablets, executives lead teachers. I observed a number of students in an EMBA marketing class use tablets a long time before I got down to doing so myself. It was only by asking them about their experiences, experimenting with their technology, and absorbing their obvious enthusiasm that I finally decided to change the way I taught marketing classes. It will be worthwhile for business schools and executive development departments in particular to investigate the feasibility of having students use tablets in executive classes.

An obvious limitation of the approach described in this paper is that is based on the very personal and undoubtedly biased views and experiences of one individual – the author. That is one of the hazards of an introspective approach. While it provides richness and context, it does not allow us to generalize or be precise. It does not allow us to answer questions such as “Is tablet PC teaching good for everyone?”, “What are the obstacles to general use of tablets in executive education teaching?”, and “What are the commonly perceived advantages and disadvantages of tablet based teaching in executive education classes?” Undoubtedly further research is needed in this regard, and as (or it might still be, if) tablets become more generally used in executive education case teaching, it will be important to gain a general picture of the experiences of instructors.

Recently, Garfield (2005) has reported the results of a study that investigated user acceptance of tablets through interviews with employees in four industries who participated in three-month trials. Using the well-known technology acceptance model (TAM) (Davis 1989), she found that tablets increased the job performance of the participants in her study by improving information exchange, allowing them to multi-task, helping them to organize their efforts, and assisting them in analyzing and displaying visual data. My experience is essentially similar: Using the table to teach classes, and especially case studies, facilitates better communication with executives, permits the simultaneous execution of a number of tasks by the instructor that would previously have been independent and unlinked, makes the organization of effort simpler and easier, and aids the instructor in both analyzing and presenting visual output. She also lists a number of advantages and limitations of the tablet which aspiring adopters might wish to consider, and catalogs the problems that potential adopters found in using the technology. Her conclusion is that tablets make an impact and are here to stay. My own experience mirrors that – I can't countenance teaching a case without taking a tablet.

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